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REARING THE MEXICAN BEAN BEETLE INDOORS

Neale F. Howard,
Division of Truck Crop and Garden Insect Investigations

It has been necessary at times to rear larvae of the Mexican bean beetle (Epilachna varivestis Muls.) during the winter for the propagation of parasites and also for insecticide testing. The methods outlined herein have been used with success.

Both larvae and adults are fed the foliage of cranberry bean. For feeding the larvae, cranberry bean seed is sown thickly in sand in 8-inch flowerpot saucers and grown under fluorescent lights (fig. 1). Sprouting is hastened by placing the seed between moistened porous paper. A wick of a thin layer of absorbent cotton is placed under the sand and run through a hole in the side of the saucer to a narrow tray of water beneath the bench (1). To drill a hole in each saucer a special bit made of brass tubing 1/2 inch in diameter with a piece of steel inserted in one end to fit the electric drill may be used. An electric saw is employed to cut a slot in each side of the brass tubing so that, when an abrasive is used, it will cut through ceramics, cement, or glass.

For feeding adults for egg deposition, seed is sown thickly in 8-inch pots of soil, and similarly grown (fig. 2). The bean plants may be grown in the greenhouse, if space is available. About 20 adults, most of them females, are placed on the plants, under a simple cylindrical cage made of wire screening to fit over a flowerpot. A larger number of beetles may be placed in a rectangular cage made of celluloid and cheesecloth, which holds two or more pots.

When the eggs have been deposited, the leaves bearing them are removed and clipped with scissors so that only the portion covered by the eggs remains, to reduce the growth of mold. These eggs are then placed on blotting paper moistened with a 5-percent solution of copper carbonate and set in a petri dish and covered.

When the eggs hatch, and before the young larvae have left the egg clusters (they remain there for several hours), the group is placed on a bean plant. The beans sprouted in sand in flowerpot saucers are used when the first pair of leaves reach their maximum size. Two or three groups of larvae are placed on each saucer of beans, in order that the leaves may be consumed before the plants deteriorate.

When a fresh supply of food is needed, the larvae are brushed off the old plants onto fresh plants with a camel's-hair brush. The old plants may be cut with shears to facilitate the operation. As the larvae grow, fewer are placed on each saucer of plants. For insecticide tests it has been determined that third-instar larvae are best.

The optimum temperature for the development of the larvae is about 82° F., and the relative humidity approximately 50 percent. If sufficient plants are kept in a room, no artificial humidification is necessary, but at times humidity must be supplied. Free circulation of warm air is beneficial, especially when the methods described above are followed; so an electric fan is kept operating much of the time. The larvae may be placed on potted beans without a cage over them if conditions in the room are suitable. Lima beans may be grown in a similar manner for rearing the corn earworm (Heliothis armigera (Hbn.)).

Literature Cited

(1) Waters, Harold.

1937. Methods and equipment for laboratory studies of insecticides. Jour. Econ. Ent. 30: 179-203.

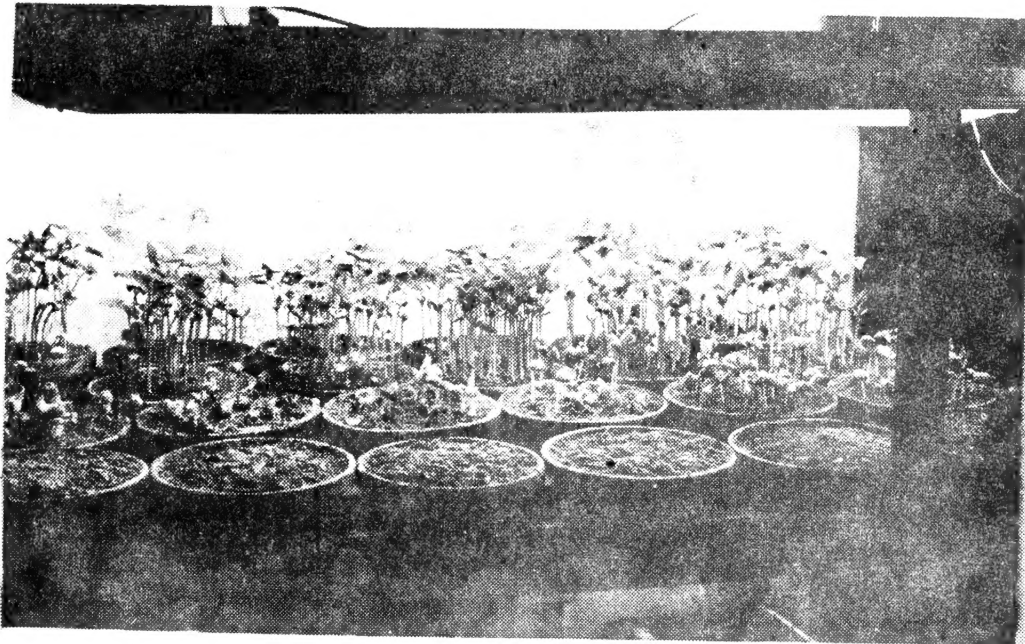


Figure 1.--Beans growing in flower-pot saucers under fluorescent lights.



Figure 2.--Beans grown in pots for feeding adults.